

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of the Claims:

1. (Currently Amended) A method of establishing a proteomic interaction map comprising
 - (a) ~~determining screening for a proteomic interactions of a~~ between at least one protein and a plurality of proteins, where the screening is performed in the absence of a simulated redox state perturbation;
 - (b) ~~determining screening for a proteomic interactions of a~~ between the at least one protein and a plurality of proteins, where the screening is performed in the presence of a simulated redox perturbation; and
 - (c) generating the proteomic map by identifying at least one different proteomic interactions between (a) and (b).
2. (Currently Amended) The method of Claim 1, wherein the simulated redox state perturbation is generated by a process selected from the group consisting of: variation of concentration of redox state modifier molecules from physiological state, variation of glucose concentration from physiological state, presence of metal ions, alteration in NADH ratio, and oxygen concentrations less than room air. ~~pathophysiological process.~~
3. (Previously presented) The method of Claim 1, wherein the simulated redox state perturbation is generated by addition of a redox state modifier molecule selected from the group consisting of superoxide, peroxides, hydrogen peroxide, alkoxides, sulfoxides, brominating species, chlorinating species, nitrosating molecules, nitric oxide, S-nitrosothiols, nitrating molecules, peroxynitrite, NO⁻ generating molecules, glutathione-regulating enzymes, NADH-regulating enzymes, and flavin-regulating enzymes.
4. (Cancelled)
5. (Currently Amended) A method of correlating proteomic interaction(s) with oxygen tension comprising

(a) ~~determining~~ screening for a proteomic interactions of between at least one protein and a plurality of proteins, where the screening is performed in room air;

(b) ~~determining~~ screening for a proteomic interactions of between the at least one protein and a plurality of proteins, where the screening is performed in the presence of decreased oxygen tension; and

(c) correlating the proteomic interaction(s) with oxygen tension by identifying at least one different proteomic interactions between (a) and (b).

6. (Previously presented) The method of Claim 5 where at least one protein employed in the determination is associated with a physiological process or a pathophysiological process.

7. (Previously presented) The method of Claim 5 where a plurality of determinations are made in step (b) with different oxygen tensions being employed in each determination.

8. (Previously presented) The method of Claim 7 where the oxygen tensions employed are in step (b) range from 0.1 mm Hg to 145 mm Hg.

9. (Previously presented) The method of Claim 5 where the different interactions in step (c) are used to identify protein functions associated with a pathophysiological process.

10. (Cancelled)

11. (Withdrawn)

12. (Withdrawn)